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Entomology, Department of Agriculture, Washington, D. C., who judged them, after a cursory examination, to be Proctotrupids, belonging to the sub-family Sceliominæ, and seeming to form an entirely new genus. Thus appears to be added one more to the parasitic enemies of our spider fauna.

Rufus Sargent and W. Henry Grant were elected members.

The following were elected correspondents:—John Ball, of London; William Carruthers, of London; Rud. Leuckart, of Leipzig; Anton Dohrn, of Naples; A. Grenacher, of Halle i. S.; Alex. Götte, of Rostock i. M.; and Ludwig Will, of Rostock i. M.

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DECEMBER 2.

The President, Dr. JOS. LEIDY, in the chair.

Thirty persons present.

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DECEMBER 9.

Mr. J. H. REDFIELD in the chair.

Thirty-one persons present.

*On Derivation in Pinus edulis and Pinus monophylla.*—At the meeting of the Botanical Section, on December 8, Mr. THOMAS MEEHAN called attention to some dried specimens of *Pinus monophylla* on the table, which were received in a fresh condition, a few months ago, from Mrs. Lewers, of Franktown, Nevada. At that time the phyllodes which took the place of the real leaves, were all monophyllous. In drying, several had opened in some specimens, and others readily separated by a little aid, showing that the species might have been two-leaved, but for some inability in the early stages of development to separate them. This monophyllous species was closely allied to *Pinus edulis*, which was confined to the Rocky Mountains; the monophyllous species being the form that prevailed further west. But in a small tree of *P. edulis*, growing in a deep ravine in Queen Cañon, in the Rocky Mountains, he had found on the same tree monophyllous, diphyllous, and triphyllous phyllodes, and there could not possibly be any doubt that the species were of one origin. The case was one worthy of note, because it had been charged that there was no actual evidence of the truth of the doctrine of derivation. Generally when such evidences as these were offered, the objector was prepared to abandon his belief in the specific distinctness of the forms, rather than to grant that two distinct species had been developed from one parent, and even in the case of these species

there were some who regarded one as but a variety of the other. But there were other distinctions: The cones were not quite the same, and the seeds being very different in size and outline, so that one could readily separate the seeds if mixed together. There was in fact a whole series of distinctions, fully as great as we could find in many well-recognized species, and which fully entitled the two forms to full specific rank; though in the face of the evident facts that they are derivations of one original parentage. Indeed, it was well known that when a plant changed its character in one respect, it must do so in others; plants in some climates annual, would become perennial or suffrutescent in others. The cotton-plant was a familiar example. In such cases the foliage and other characters varied from those connected with the annual form, and from this fact some botanists had regarded *Gossypium herbaceum* and *Gossypium arboreum* as distinct species. In the case of these two species of *Pinus*, the one which could not develop its phyllodes with two separate individuals, would of necessity present some peculiarities in the scales of the cone, as these were, morphologically, but transformed phyllodes. Under morphological laws, that which affected the leaves ought to affect the carpels or other parts of fructification which were modified from them.

The true position of the species in development is that *Pinus edulis* had the highest rank. In raising both species from seed there was no difference whatever between the seedlings during the first season. In these young and delicate plants, true leaves were perfectly developed; these were flat, linear lanceolate, and of a deep glaucous hue. *Pinus edulis* assumed stout vigorous branches the second year; then the true leaves were suppressed, a portion only being adnate with the stem forming a sort of cushion, or as bud-scales, or bracts under the scales of the cone, from the axis of which the phyllodes—secondary leaves, or bundles of leaves of some authors—spring. In *Pinus monophylla* only a few branches made phyllodes the second year, and he had plants which were ten years old from the seed, which continued to bear branches with true leaves almost equally with those bearing phyllodia. The monophyllous branches were never as strong as those from *Pinus edulis*, and in ten years a plant of *Pinus edulis* would be double the size of *Pinus monophylla*. Assuming, as we might, that the two had one parentage, we saw that the one had less vigor of growth; it retained more of its juvenile characteristics, and retained them longer than the other; and it never reached the power of development that *Pinus edulis* had attained. We may say, with confidence, that *Pinus monophylla* sprung from the same parentage as *Pinus edulis*, and became permanently different throughout, being subjected to conditions unfavorable to a full development. It would appear that the soil and climate of Nevada were not favorable to the usual development of *Pinus edulis*, and hence, through the long course

of ages, the suppressed features that characterized full maturity in the original, became, under the law of heredity, permanent ones.

It was not often that we had such clear evidence of the unity of origin in two certainly distinct species, and as supporting the modern ideas of evolution, the case was worthy of being placed on record.

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DECEMBER 16.

The President, Dr. JOS. LEIDY, in the chair.

Twenty-nine persons present.

A paper, entitled "Homologies of the Vertebrate Crystalline Lens," by Benjamin Sharp, M. D., was presented for publication.

The death of Robt. L. Weber, M. D., a member, was announced.

*Immediate Influence of Pollen on Fruit.*—Mr. THOMAS MEEHAN directed attention to an ear of Indian corn on the table, sent by Mr. Burnett Landreth, which had nearly all one side with brownish-red grain, the other side creamy white, which was the normal color of the variety. Usually the intermixture of colors which occasionally occurred in an ear of corn, is attributed to cross-fertilization. It is apparent that this could not be the case in this instance. The whole solid block is colored, and, at the edge of the colored mass only half a grain would be colored in some instances. The coloring influence had evidently spread from some central point, quite independent of any single grain, and had spread from grain to grain through the receptacle, until the coloring material was exhausted. In cross-fertilization from the entangled position of the silk-like pistils, no such regularity of coloring in adjoining grains could occur. On reflection we may understand that at times color in corn must come from causes independent of cross-fertilization, as the departure in the first instance from one color must be from an innate power to vary in color, independently of any pollinating influence.

The facts are interesting as bearing on many problems as yet not wholly solved. Much has been said about the changes in nature being by slow modifications through long ages, but we have frequent instances of sudden leaps. There are no gradations between the colors of these grains. Again, it is in dispute how far cross-fertilization influences the seed. Generally, no immediate influence is conceded; we have to wait till the seed grows, and we can examine the new plant to ascertain the potency of the several parents. So far, corn has been the chief, and almost the only, evidence that the seed or its surroundings are immediately affected; but recently statements have been made that the receptacle in the strawberry—what we know in every-day life as the